

Regarding claims 7, 8, 11 and 12, the specification is alleged to fail to disclose the porous material being substantially homogeneously disposed within the cavity. The objection is respectfully traversed in view of the amendment to the specification and the discussion of homogeneity in the second paragraph on page 3 of the specification. The amendment to the specification is not new matter since the added material is in originally filed claims.

Claims 5, 6, 11, 12, 23 and 24 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite. These claims have been amended to overcome the rejection.

Claims 5 to 8, 11, 12, 23 and 24 were rejected under 35 U.S.C. 112, first paragraph for the reasons set forth in the objection to the specification. The rejection is respectfully traversed for the reasons set forth in the discussion of the objection to the specification.

Claims 1, 5, 7, 11, 17 and 19 were rejected under 35 U.S.C. 103 as being unpatentable over Lebailly et al. in view of Kuzay and Scanlon et al. and claims 2, 6, 8, 12 18 and 20 to 24 were so rejected further in view of Hermanns et al. The rejections are respectfully traversed.

Claim 1, the only independent claim, requires, among other features, a heat sink which includes an enclosure having a highly thermally conductive surface region composed of a composite of highly thermally conductive fibers disposed to provide a matrix, the enclosure including the said highly thermally conductive

surface region and a plurality of the fibers which provide the matrix extending externally of the matrix and into the cavity to provide a porous, highly thermally conductive material integral with and thermally coupled to the highly thermally conductive surface, the porous material being the plurality of thermally conductive fibers extending from the matrix into the cavity. No such concept is taught or suggested by any of the cited references.

The only cited reference which even refers to fibers is Scanlon. However, the structure of Scanlon is very different from that claimed herein. In Scanlon, the fibers are held together to form a flat composite which act as walls. There is no porosity in the fibers of Scanlon and there clearly is no teaching or suggestion that a plurality of the fibers which form the composite extend externally of the composite or matrix and into a cavity to provide a porous, highly thermally conductive material integral with and thermally coupled to said highly thermally conductive composite or matrix and disposed in the cavity wherein the porous material is the plurality of thermally conductive fibers extending from the matrix into the cavity. The concept of having a single matrix composed of fibers, a plurality of the fibers also extending into the cavity is nowhere taught or suggested by any of the cited references or any proper combination of the references. It is apparent that the fabrication of such a heat sink is made economically superior to the prior art since no added step is required for the purpose of attaching the porous medium to the matrix as is the case of the prior art where a porous medium is

present. It is again noted that Scanlon does not teach or in any way suggest the existence of a porous medium or the use of the individual fibers extending from the fiber containing composite as the heat sinking material in a phase change material.

Claim 2 further limits claim 1 by requiring that the initial phase of the phase change material be the solid phase and the final phase be the liquid phase. No such combination is taught or suggested by the cited references.

Claims 5 and 6 further limit claims 1 and 2 by requiring that the porous material be aluminum. No such combination is taught or suggested by the cited references.

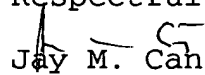
Claims 7, 8, 11 and 12 further limit claims 1, 2, 5 and 6 by requiring that the porous material be substantially homogeneously disposed within the cavity. No such combination is taught or suggested by the cited references.

Claims 17 to 20 further limit claims 1, 2, 7 and 8 by requiring that the thermally conductive fibers be graphite. No such combination is taught or suggested by the cited references.

Claims 21 to 24 further limit claims 1, 2, 11 and 12 by requiring that the phase change material be wax. No such combination is taught or suggested by the cited references.

In view of the above remarks, favorable reconsideration and allowance are respectfully requested.

Respectfully submitted,

  
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**MAILING CERTIFICATE UNDER 37 C.F.R. §1.8(A)**

I hereby certify that the above correspondence is being deposited with the U. S. Postal Service as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on March 12, 1997.

A handwritten signature in cursive script, reading "Lottie Davis", written over a horizontal line.

Lottie Davis